From: Hedgpeth, Zach To: Hunt, Jeff

Subject: FW: cost analysis for SCR on natural gas compressor station turbine

Date: Thursday, March 18, 2021 6:54:00 AM

Attachments: image001.png

IES memo for ODEQ Follow-up SCR performance for compressor stn units 030921.pdf

GTN Unit 12B (as example) Quote-Based SCR Cost Effectiveness Update for OR DEQ_031521.pdf

SCR Cost Effectiveness Unit 12B (3-15 vendor quotes update).xlsx

19% Aqua Ammonia Delivery Quote.pdf PN21034 Rev0 TCEnergy-SCR 3-8-2021.pdf

FYI with attachments.

Zach Hedgpeth, PE 206-553-1217

Pronouns: he/him/his

From: WESTERSUND Joe * DEQ < Joe. WESTERSUND@state.or.us>

Sent: Wednesday, March 17, 2021 4:58 PM To: Hedgpeth, Zach < Hedgpeth. Zach@epa.gov>

Cc: ORMAN Michael * DEQ < Michael.ORMAN@state.or.us>; WEST Walt * DEQ

<Walt.WEST@state.or.us>

Subject: cost analysis for SCR on natural gas compressor station turbine

Hi Zach.

We recently received some new cost analysis information from Gas Transmission NW. They have two natural gas compressor stations in Oregon that are part of the 4FA process, and for which we'd identified SCR as potentially cost effective. This is a cost estimate based on a vendor quote for one of those (turbine 12-B).

A question I had for you- do you have any comments about this cost estimate? I'm looking especially at the **direct and indirect annual costs** and whether those are higher than what's reasonable. Thank you for any comments you have time to offer. Our next meeting with the company is next Thursday (3/25), so comments would be most helpful to us if received by next Wednesday. -Joe

Joe Westersund

Environmental Engineer, Air Program Operations Oregon Department of Environmental Quality 700 NE Multnomah Street, Suite #600 Portland, OR 97232 (503) 229-6403 office

westersund.joe@deg.state.or.us

pronouns: he / him / his Usual Schedule: 8am - 5pm, M-F

From: ORMAN Michael * DEQ < michael.orman@deg.state.or.us >

Sent: Wednesday, March 17, 2021 8:34 AM

To: WESTERSUND Joe * DEQ < <u>ioe.westersund@deq.state.or.us</u>>

Subject: FW: Regional Haze - GTN

From: Melinda Holdsworth < melinda holdsworth@tcenergy.com >

Sent: Monday, March 15, 2021 11:39 AM

To: ORMAN Michael * DEQ < michael.orman@deg.state.or.us >

Cc: Ruth Jensen < ruth jensen@tcenergy.com>; Jim McCarthy - IES (jamesmccarthy@comcast.net)

<jamesmccarthy@comcast.net>

Subject: Regional Haze - GTN

Michael,

Attached are the following:

- Updated cost for Unit 12B, including differences from last submittal,
- Vendor quotes that updated cost are based on and
- Memo detailing SCR performance in natural gas turbine applications.

GTN is looking forward to discussing with you on Wednesday.

Thanks,

Mel Holdsworth

US Environment – Compliance

Direct: 832-320-5665

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Thank you